



AN2100™ System

General Description

Technical Manual 76.2100/1

Revision A, 3/99

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630.378.8800

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1. Introduction

1.01 This manual describes the AN2100 system, applications, connections, architecture, and logical descriptions. The CraftStation is a windows-based application that can manage the AN2100 system. A description of the CraftStation's features and functional requirements is provided in this document. Refer to *AN2100 Provisioning, 76.2100/5* for more detail. The Operations and Maintenance features are also described in this document. For more details, refer to *AN2100 Maintenance, 76.2100/6*.

AN2100 System Overview

1.02 The Tellabs AN2100™ system is a network element for adapting time division multiplexed (TDM) based voice traffic onto an asynchronous transfer mode (ATM) backbone network. The system combines DS0-level cross connection, echo cancellation and ATM adaptation functions.

1.03 The AN2100 system adapts TDM DS0s (Digital Signal, Level 0) into ATM Virtual Channel Connection (VCC) cell streams using ATM Adaptation Level 1 (AAL1). An option to perform echo cancellation on individual DS0s also exists. Each DS0 can be assigned to an ATM VCC using a virtual channel identifier (VCI) and virtual path identifier (VPI). In addition, DS0s can be connected to each other within and among the two OC-3 TDM tributaries. Connection management is performed using a pair of Ethernet interfaces to an external controller. However, OSS management occurs using the Simple Network Management Protocol (SNMP) over a pair of Ethernet interfaces. An option for element management exists using Tellabs CraftStation software, which resides on a personal computer. CraftStation software provides access to alarm and performance management information.

1.04 The network topology using two AN2100 Systems and the control mechanisms required to establish and maintain a TDM-to-ATM and TDM-to-TDM connection is shown in Figure 1.1. This figure shows various network interconnections of the AN2100 also. Typically, the connection management system supplies provisioning information, such as Time Division Multiplexing (TDM) to Virtual Path Identifier/Virtual Channel Identified (VPI/VCI) addressing. The Operation Support System (OSS) is used to monitor the status of the network elements and network.

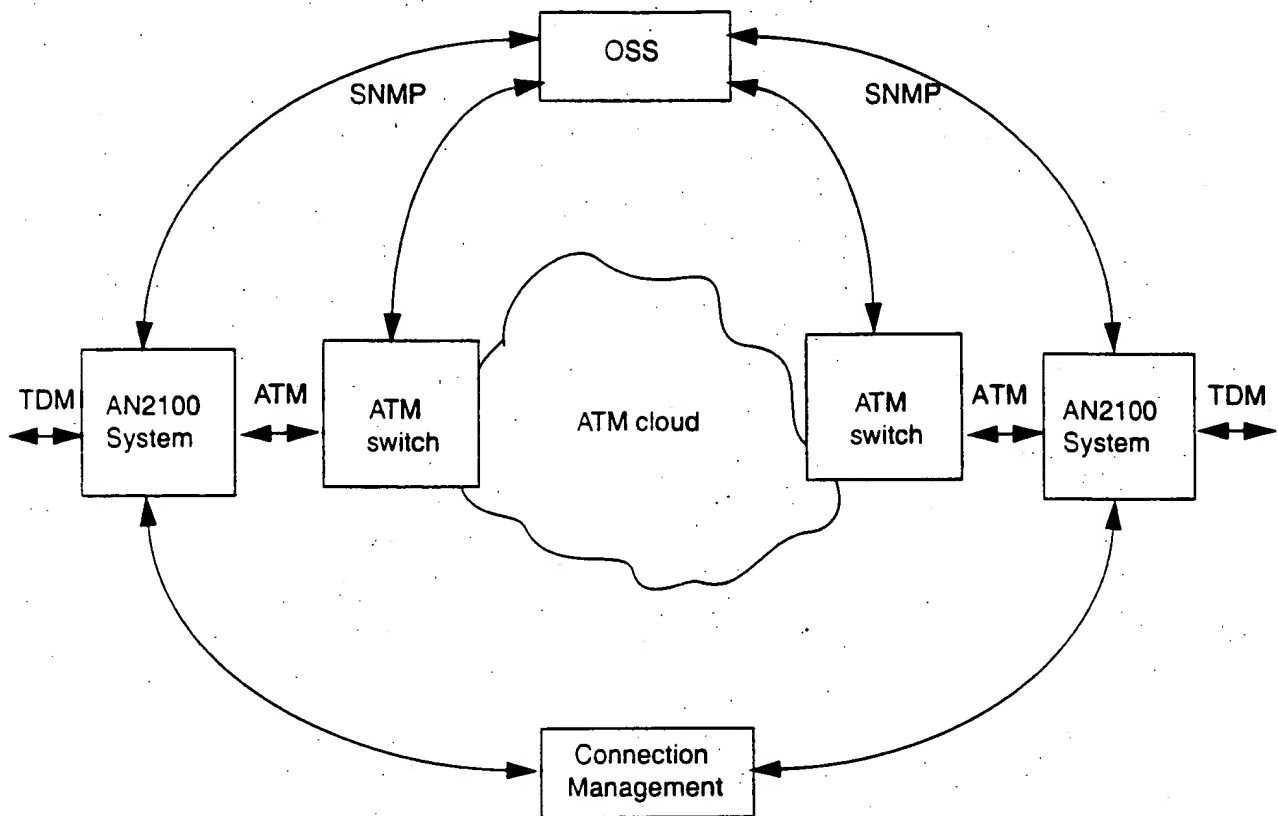


Figure 1.1 Network Topology

2. Applications

2.01 The AN2100 provides connection of local exchange to ATM. Refer to Figure 2.1.

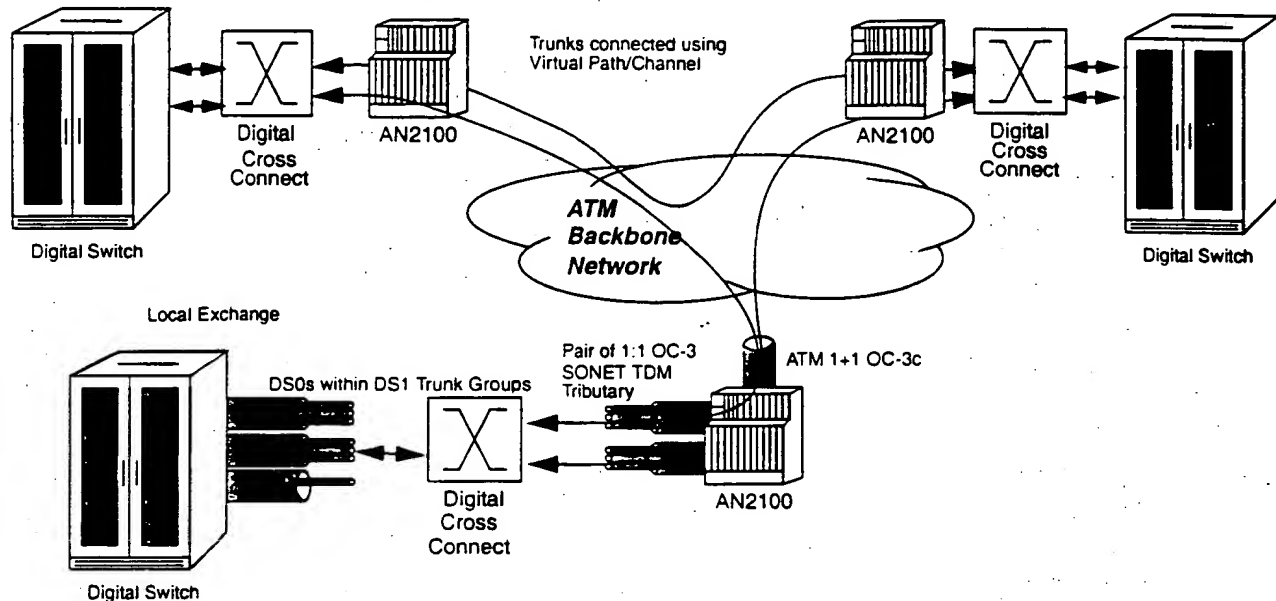


Figure 2.1 Intermachine Trunks Over ATM

2.02 Adapting local exchange traffic to ATM allows the traffic to be transported over an ATM backbone for the following purposes:

- Combining local exchange traffic with data to gain efficiencies of operation over a single network
- An additional level of protection in the ability to reroute using ATM-level connectivity

2.03 Thus, the AN2100 supports 2:1 concentration with the two working OC-3 TDM tributaries.

Features

2.04 The AN2100 provides the following features:

- AAL1 adaptation to ATM on a per-DS0 basis
- Per-DS0 echo cancellation
- High-speed, protected (1 + 1 SONET) access on both the tributary (OC-3) and aggregate (OC-3c) facilities
- Selective mapping of 2016 individual incoming DS0s out of a possible 4032 to 2016 available ATM VCCs



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Scholtens et al.

Art Unit : 2662

Serial No. : 09/632,393

Examiner : Michael I. McLoughlin

Filed : August 4, 2000

Title : CIRCUIT INTEGRITY IN A PACKET-SWITCHED NETWORK

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Commissioner for Patents

P.O. Box 1450

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DECLARATION OF DALE SCHOLTENS UNDER 37 C.F.R. 1.131

I, Dale SCHOLTENS declare as follows:

1. I am an inventor named in the patent application identified above.
2. I am currently employed by Tellabs, Inc., the assignee of the present application, as a Senior Staff Engineer. I have worked for the assignee for the last ten (10) years. I have over 30 (thirty) years of experience with circuit switched voice and data, digital transport/SONET, packet data communications, packet-switched voice, echo cancellation. I have earned a BS degree in Engineering and a MS degree in Computer science from University of Illinois.
3. I have reviewed the Office Action dated November 19, 2003 and patent specification (Specification) for the application identified above including the pending claims. The patent specification claims the benefit of priority of U.S. Provisional Application Ser. No. 60/147,462, filed August 6, 1999, and is incorporated therein by reference.
4. I reviewed the Invention Disclosure that I wrote and submitted for this matter. The Invention Disclosure was written and is dated before June 20, 1999. A redacted copy of the Invention disclosure is attached as Exhibit 1.

Applicant : Scholtens et al.
Serial No. : 09/632,393
Filed : August 4, 2000
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Attorney's Docket No.: 06269-027001 / PA080021

5. I reviewed the Provisional Application, including Appendix A, which is Technical Manual 76.2100/1, General Description, AN2100 System, Tellabs, Inc. (3/99) (AN2100 Technical Manual). The manual is dated and was distributed with Tellabs prior to the critical date of June 20, 1999. A partial copy of the AN2100 Technical Manual, including pages i-1.6, is attached as Exhibit 2.
6. I have personal knowledge of the development of the Technical Manual as I was one of the systems engineers responsible for guiding the development of the Tellabs AN2100 System and had various responsibilities in determining AN2100 System requirements and architecture from mid-1996 until (and beyond) the point in time at which the Provisional Application was filed. The Technical Manual was developed in association with the realization of the AN2100 System as a Tellabs product.
7. The Invention Disclosure discloses providing for a continuity check (COT) over narrowband circuits adapted to the asynchronous transfer mode. The Invention Disclosure teaches the subject matter of independent claims 1, 13 and 17 of the Specification and also teaches using the capabilities of Tellabs, Inc. AN2100 System for the COT.
8. The AN2100 Technical Manual discloses delivery of narrowband services via a packet (broadband) network. The AN2100 Technical Manual, and, thus, the Provisional Application, also teaches the subject matter of dependent claims 4, 5, 16 and 20 of the pending application.

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9. The COT disclosed in the Invention Disclosure and the Technical Manual with the underlying concept of delivering narrowband services over a broadband network was developed before June 20, 1999, the date of the Committee T1S1 Contribution on Q.SCOBB (9S101470) (Q.SCOBB) reference cited in the Office Action.
10. The Office Action cites the Q.SCOBB reference for the feature of supporting narrowband services via broadband bearer technologies. The Q.SCOBB reference is dated June 20, 1999, which is after the date of both the Invention Disclosure and AN2100 Technical Manual appended to the Provisional Application.
11. Independent claims 1, 13 and 17 of the Specification recite the features of performing a continuity check by exchange of known bits.
12. Dependent claims 4, 5, 16 and 20 of the Specification add to claims 1, 13, and 17 the feature that the continuity check is performed during a set-up process for a narrowband call over the packet (broadband) network. The topology of the network for supporting narrowband calls over the broadband network is shown in FIG. 1 of the Specification.
13. The AN2100 Technical Manual discloses adapting time division multiplexed (TDM) narrowband voice traffic onto an asynchronous transfer mode (ATM) broadband network (par. 1.02 on page 1-1). The network topology to establish (set-up) and maintain a TDM-to-ATM is shown in FIG. 1.1 on page 1-2. FIG. 1.1 is equivalent to FIG. 1 of the Specification.

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14. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the above-identified application or any patents issued thereon.

Signature: _____



Date: March 19, 2004

Typed/Printed Name: Dale Scholtens